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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/602,230 | 06/23/2000 | Qixiang Sun | 13632 (YOR9-2000-0337) | 9988 |

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EXAMINER

ABELSON, RONALD B

ART UNIT PAPER NUMBER

2666

DATE MAILED: 04/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 09/602,230 | Applicant(s) K SUN ET AL. | |
| | Examiner Ronald Abelson | Art Unit 2666 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 January 2005.
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☒ Claim(s) 14-27 is/are allowed.
 6) ☒ Claim(s) 1-5 and 28-32 is/are rejected.
 7) ☒ Claim(s) 6-13 and 33-40 is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 23 June 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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2. Claims 1 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art 'AAPA' in view of Sawyer (US 6,603,972).

Regarding claims 1 and 28, AAPA teaches a group-based multicast messaging system implementing dedicated logger member for logging all multicast messages sent in said system (pg. 1 line 26 - pg. 2 line 1), a method for reliably delivering messages from senders to receivers of said group;

A receiver detecting one or more missing messages from a sequence of multicast messages sent to members sent to members of the group (pg. 2 lines 1-2);

Soliciting retransmissions of missing messages to another member or logger of said group (asks these neighbors to repair missing messages, pg. 2 lines 15-17);

Enabling repair of missing messages by said another member in a first message recovery phase (asks these neighbors to repair missing messages, pg. 2 lines 15-17), wherein reliable delivery of messages in said multicast messaging system is ensured (provides reliable multicast, pg. 1 line 26 - pg. 2 line 1). Note, these messages can be 'fresh'.

AAPA is silent determining said receiver's missing messages as fresh or stale.

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Sawyer teaches determining messages fresh or stale (col. 4 lines 49-57). Note, the examiner corresponds the applicant's fresh messages with the reference's delivered packets in real-time or close to real-time.

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of AAPA by setting a timer at the sender upon transmission of a message and checking the timer upon receipt of a solicitation for retransmission of a missing message. Before the sender retransmits the timer would be checked to see if the message had gone stale. This would improve the system since if the message had gone stale, the sender would not retransmit in a real-time environment.

3. Claims 2-5 and 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of AAPA and Sawyer as applied to claims 1 and 28 above, and further in view of Van Renesse (US 6,724,770).

The combination is silent on detecting a missing message includes determining a gap in sequence numbers (fig. 6 box 602, col. 5 lines 49-57).

Van Renesse teaches each multicast message is assigned a sequence number (fig. 2, col. 3 lines 49-52) and detecting a

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missing message includes determining a gap in sequence numbers (col. 19 lines 57-61).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of AAPA and Sawyer by having the transmitting device assign each packet a sequence number and having the receiving device check for sequential reception of the sequence numbers. This modification can be performed in software. This would improve the system by providing a method for determining a packet has not been received.

Regarding claims 3 and 30, said missing message status is determined by comparing a time difference between a current time and the time of actual sending of said message in said system against a fixed threshold (Sawyer: col. 4 lines 49-53), wherein when said time threshold has not been exceeded, assigning said fresh status / real-time or close to real-time, otherwise assigning said stale status to said missing message. Note in order to determine if the packet was delivered in real-time or close to real-time, the system must compare the difference between the current time and the time of actual sending of said message. If the delivery time is less than a fixed time threshold, the packet is real-time or close to real-time. If the

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delivery time is greater than a fixed time threshold, the packet is stale.

Regarding claims 4 and 31, Van Renesse teaches generating a gossip message comprising a retransmission request of a missing message (fig. 3 box 306, col. 3 lines 17-20); randomly selecting a member of the group (fig. 3 box 306, col. 3 lines 17-20); sending said gossip message to said randomly selected member (fig. 3 box 306, col. 3 lines 21-24).

Regarding claims 5 and 32, Van Renesse teaches the gossip message comprises a negative gossip comprising a member's missing messages (identifies the lost message, col. 3 lines 21-24).

Allowable Subject Matter

4. Claims 14-27 are allowed.
5. Claims 6-13 and 33-40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

6. Applicant's arguments filed 1/18/2005 have been fully considered but they are not persuasive.

Regarding claims 1 and 28, the applicant correctly states that Sawyer in combination of AAPA does not teach or suggest the ability to repair stale messages (applicant: pg. 4 lines 4-6). However, the claimed invention does not require this limitation. Claims 1 and 28 comprise: determining said receiver's missing messages as fresh or stale, and **one of**: enabling repair of fresh missing messages by said another member in a first message recovery phase **or**, enabling repair of stale missing messages by a logger in a second message recovery phase, wherein reliable delivery of messages in said multicast messaging system is ensured. The examiner maintains that Sawyer teaches determining messages to be fresh or stale and AAPA teaches enabling repair of fresh missing messages by said another member in a first message recovery phase. Regarding the applicant's contention, "Sawyer teaches away from the present invention since delayed data packets that are stale, i.e., not received in or close to real-time, are discarded - not repaired as in the present invention" (applicant: pg. 4 lines 12-15), the repairing of stale packets is not claimed.

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Regarding the argument that Sawyer does not provide motivation to combine with AAPA (applicant: pg. 4 lines 16-21), it is well known in the art to discard delayed packets in a real-time environment.

Regarding claims 3 and 30, the applicant contends that the concept of fresh or stale is indicative of whether the message still resides in a multicast group member's receive buffer (applicant: pg. 5 1st paragraph). However, this limitation is not in the claims.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,


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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald Abelson whose telephone number is (571) 272-3165. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Ronald Abelson
Examiner
Art Unit 2666


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4/5/05